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Companies Financial Performance and Macroeconomics Condition, How They Relate to Share Price

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***Abstract*—The idea behind this research is that theoretically macroeconomics condition as well as financial performance together should correlate with companies stock price. The main purpose of this study is to know how strong is the correlation of companies financial performance and macroeconomics condition to company stock price in consumption sector in Indonesia stock exchange market. The independent variables uses in this study are: price earnings ratio, price to book value ratio, net profit margin, gross domestic product, inflation rate and BI-rate; whereas the dependent variable is companies stock price. Population in this study is consumption sector in Indonesia stock exchange market. Sampling method use in this study is stratified random sampling. This study uses multiple regression models. The data use in this study is quarterly data from 2009 until first quarter of 2017. The result of the study shows that there are strong correlations between all independent variables with stock price and found that there are significant correlation between company stock price with price earnings ratio, price to book value, net profit margin, return on equity, gross domestic product, inflation rate and BI-rate simultaneously.**

Keywords—macroeconomic variables; financial ratios; stock price

I. INTRODUCTION

Market price of a company's share is influenced by many things, among all, are: the supply and demand for that particular stock, economic and political condition of the country, financial performance of the company, specific event happened in that country, even rumor, etc. The analysis of determinant of value, such as earnings prospect is the core of fundamental analysis. However, the prospects of the firm are tied to broader economy [1].

Indonesia stock market (IDX) is considered to be one of fast growing stock market in Asia. Indonesia's Financial Service Authority statistic data on January 2014 showed the composite index, increased from 2745.83 in 2007 to 4274.18 in 2013, an increase of 55.66% in 7 years. In the same period, the listed companies increased 26.11% from 383 companies to 483 companies. Respectively, the market capitalization is started from US$ 211.1 billion in 2007 become US $ 343.85 billion, reached 62.88% increased. The consumption sector consist of five subsectors, they are: food and beverages, cigarettes, pharmacy, cosmetic and home appliances.

The primary research's objective in this study is: to know how strong the correlation between companies' financial performance and macroeconomic conditions to companies' stock price in consumption sector in IDX.

The primary means of the numbers in the financial statements are to communicate the financial information inside as well as outside the company [2].

Financial ratios are one among others use to compare company's performance from one period to another, as to compare among companies' performance.

A. Financial Ratio

1) Profitability ratio: All definitions about profitability ratios agreed that profitability ratios are used to measure the efficiency of a company in managing its operations [3].

a) Net profit margin: Net profit margin (NPM) basically measures how efficient a company in managing its business operations.

Net Profit Margin= (Net income)/Sales

b) Return on equity: Return on equity (ROE) is a concept of the accounting rate of return on stockholders' investment [2].

Return on Common Equity = (Net income)/ (Common stock equity)

2) Market value ratio

a) Price earning ratio (PER): PER measures the amount that investors are willing to pay for each rupiah of a firm's earnings.

Price/Earnings ratio= (Market price per share of common stock)/ (Earning per share)

b) Price to Book Value Ratio: Price to book ratio measures how a company manages its business to create value for its shareholders. The market value ratio provides an assessment of how investors view the firm's performance in

the context of risk and return. A stock expected to earn high return relative to its risk typically sells at a higher M/B multiples [4].

Price book value ratio = (Market price per share of common stock)/ (Book Value per share of common stock)

B. Macroeconomics Variables

1) Gross domestic product: Gross Domestic Product (GDP) is the market value of final goods and services produced within a country at a given period [5] .The market value in the gross domestic product (GDP) is calculated from the market price of each final goods and services of the country. The value of final goods and services are goods and services consumed by the whole society of the country.

2) Inflation: Inflation is the increase of the price level. Inflation is measured by using index number. The indicator used to measure the inflation rate is the consumer price index (CPI). The provision of goods and services in the CPI basket is done on the basis of the cost of living survey (SBH) conducted by the Central Bureau of Statistics (BPS). SBH 2012 was held in 82 cities, that is in 33 provincial capitals and 49 other cities.

Theoretically, causes of inflation are the demand side (demand pull inflation) and the supply side (cost push inflation). Demand pull inflation occurs due to the increasing demand side, among others: consumption, investment, government spending. Cost push inflation occurs because of the increase in production costs of the company, usually the increase in wage rates become the government's concern

3) Interest rate: One of the most important and innovative sectors in the modern economy is the financial system. The financial system is a set of institutions and instruments that form the vital circulatory system that channels resources from savers to investors. The system links together goods, services and finance in domestic and international markets. [6]. Financial institutions and markets are channels for saving flows to finance investments in new capital that makes the economy grow [5]. From the views of these two economists it can be seen that there is a close relationship between macroeconomic, institutions and financial markets. Discussions about the linkage of financial and macroeconomic systems have been important since 1998, when many countries, known with good economic fundamentals but rapidly experienced economic downturn due to bad financial system.

Capital can be differentiated into physical capital and financial capital. Stocks, bonds, short-term securities, and loans are collectively known as financial assets. The interest rate is the percentage of an asset's price. If the interest rate on an asset increases then the asset price decreases, and when the interest rate on an asset decreases the asset price increases [5]. In this research, Bank Indonesia (BI) rate will use as a variable that represent interest rate.

High interest rates will reduce the present value of future cash flows, thereby reducing the attractiveness of an investment opportunity. For this reason, the interest rate is a key determinant of business investment spending. The interest rate is perhaps the most important macroeconomic factor to consider in an individual's investment analysis [1].

C. Previous Researches

There is a study about the correlation between sukuk and sharia-compliant in GCC countries by using monthly data from 2013-2016, with concentration on the macroeconomic factors that affect stock-sukuk co movement. It found that there is no effect on macroeconomic variables on the stock and sukuk correlation. The industrial production and interest rate have effects on the stock and sukuk correlation, on the other hand the CPI does not have any effect on the stock-sukuk correlation [7].

Another study investigated the relationship between Turkish banks stock prices and a set of micro and macro variables from 3rd quarter of 1995 to 4th quarter of 2015. Using the data panel, found that in general, both macro and micro variables can reliably price the bank stocks. Specifically, the findings showed that asset quality, management quality, earning, size, money supply, and interest rate are significantly related to stock prices [8].

A research has attempted to explore the relation especially the causal relation between market index and three key macroeconomics of Indian economy (wholesale price index, index of industrial production and exchange rate (Rs/$). The result showed that Indian stock market was approaching towards informational efficiency at least with respect to two macroeconomics variables: exchange rate and inflation (wholesale price index) [9].

The relationship between macroeconomic variables (short term and long term interest rates, industrial production, price levels and exchange rate) to the Singapore stock market index (STI) has been studied in 2004. It concluded that the Singapore stock market index (STI) and the property index form cointegrating relationship with changes in the short and long term interest rates, industrial production, price levels, exchange rate and money supply [10].

II. METHOD

This study is an explanatory research method using quantitative data. The data used in this study is historical data.

A. Population and Sample

Population in this study is companies listed in consumption sector in IDX. The sampling method used in this study stratified random sampling. Stratified sampling is used so that each sub sector in consumption sector will be represented proportionally. Random sampling is used to choose the company within each sub-sector. The companies chosen are: PT Kedawung Setia Industrial Tbk (KDSI), PT Ultrajaya Milk Industry & Trading Co Tbk (ULTJ), PT Gudang Garam Tbk (GGRM), PT Indofood Sukses Makmur Tbk (INDF), PT Unilever Indonesia Tbk (UNVR), PT Tempo Scan Pacifik Tbk (TSPC), PT Darya-Varia Laboratoria Tbk (DVLA), PT Tiga Pilar Sejahtera Food Tbk (AISA) and PT Wilmar Cahaya Indonesia Tbk (CEKA).

B. Sources of the Data

This study uses secondary data. Sources of data in this research are from the central bureau of statistic, Central Bank (Bank Indonesia), Indonesia stock exchange market and Bloomberg. The data used is quarterly data.

C. Regression Model

The regression model in this study is as follows:

$\hat{Y} = a + b1\ PE + b2\ PBV + b3\ NPM + b4\ ROE + b5\ GDP + b6\ INFL + b7\ BI\ rate + e$

Where:

$\hat{Y}$ is companies' stock price

a is constant

bi is regression coefficient

e is error term

In this study, the data will be run using SPSS in order to get the coefficient of regression and coefficient of correlation.

D. The Null and Alternative Hypotheses

Ho: there is no correlation between companies' financial performance and macroeconomics condition simultaneously with companies' stock price

Ha: there is correlation between companies' financial performance and macroeconomics condition simultaneously with companies' stock price

III. Results and Discussion

A. Relation Between Independent Variabels to Dependent Variabel

Theoretically, it is expected that with increasing profit so do dividend paid, therefore the stock of that company in the market become more attractive to the investor. This will drive the stock price up. Therefore it is expected that net profit margin and stock price are have positive relation. ROE implicitly can be used by shareholders as a signal whether a company gives them a good return. Higher ROE is expected to have positive correlation with stock price.

For future-oriented investors, a stock that has a high PER, still has a bargaining power only if the earnings and dividend in the future grow faster. The empirical study showed that the same pattern is not existed between PER and expected return. As a result, a theoretical assumptions that investing in a low PER's stock will give a higher expected return rather than that in high PER's stock, is not always the case [1]. A stock with low price earnings ratio (PE) is expected still has wide opportunity to increase. Therefore these kinds of stock have potential increase in price. However, since there is no specific value that a stock is said to have low PE. The relation between PE and stock price is expected to vary.

Gross Domestic Product (GDP) in essence is income of people in a country. Higher GDP means that people spend higher in consumption. This will boost sales of companies, and assuming that the companies can optimally manage their operational cost, their profit will increase too. Therefore it is expected that relation between GDP and stock price is positive.

Inflation is an increase in general price of products and services. From macroeconomics point of view, high expected inflation will drive people to spend now. On the other hand high inflation drives people not to save. They will seek alternative for saving, buy stock will be one of that alternatives. From this explanation it seems that relation of inflation and stock are relatively varied. On one side, saving rate of interest is the interest a person receives if he makes a saving account in a bank. On the other side, credit rate of interest is interest a person should pay if he buys something on credit.

In general, both type of interest usually referred to as interest rate. These two types of interest rate are positively correlated. Low saving rate of interest will hinder people from do the saving. On the other hand low credit rate of interest will drive people to spend more. Therefore the relation between interest rate and stock price is expected to be varied. The term varied used in this study means that the relation of both variables can be either positive or negative.

B. Test of Classical Assumptions

The companies that meet for the test of classical assumptions are AISA, CEKA, INDF and KDSI.

C. Analysis of Regression Result

TABLE I. Regression Result

Company	Regression Equation
AISA	Y = –528.5 – 157.51 PE +1481.6 PBV – 39.77 NPM – 93.16 ROE + 2.23 GDP +133.8 INFL + 413.8 BI_rate
CEKA	Y = 68.83 + 7.34 PE + 216.19 PBV – 32.14 NPM +25.85 ROE +7.56 GDP + 51.40 INFL + 11.07 BI_rate
INDF	Y = 6135.13 + 282.68 PE + 425.88 PBV – 14.02 NPM – 17.43 ROE – 10.35 GDP + 451.72 INFL – 983.2 BI_rate
KDSI	Y = – 243.86 – 4.74 PE + 862.17 PBV + 0.281 NPM + 0.95 ROE + 2.95 GDP + 7.47 INFL + 33.49 BI_rate

Sources: processed data

The regression equation in table I, showed that stock price in each company response differently to each independent variable. PE, NPM, ROE, GDP and BI-rate shows different plus or minus sign in four regression equations. Only PBV and INFL in all regression equation have same positive sign. Price earnings ratio has positive relation to company stock price in two companies, CEKA and INDF. However PE has negative relation with stock price for AISA and KDSI. Price to book value (PBV) and inflation rate (INFL) has positive relation to stock price of all companies. Net profit margin (NPM) has negative relation to stock price of AISA, CEKA and INDF; however, NPM has positive relation to KDSI stock price. Return on equity (ROE) has positive relation to stock price of CEKA and KDSI and negative relation to stock price of AISA and INDF. BI-rate has positive relation to stock price of AISA, CEKA and KDSI but it has negative relation to stock price of INDF.

In the regression equation of AISA, an increase of price earnings ratio of 1 will decrease its stock price by Rp157.51, - with all other independent variable are considered constant. An

increase of price to book value of 1 will increase company's stock price by Rp1,481.6,- with all other independent variable are considered constant. An increase of net profit margin by 1% will decrease company's stock price by company's stock by Rp39.77,- with all other independent variable are considered constant. An increase of return on equity by 1% will decrease company's stock price by Rp93.16,-. Increase of GDP by 1% will increase company's stock price by Rp2.23,- with all other independent variable are considered constant. One percent increase in inflation rate will increase company's stock price by Rp133.8,- with all other independent variable are considered constant. An increase of BI-rate by 1 basis point will increase company's stock price by Rp413.8 with all other independent variable are considered constant.

Regression equation of CEKA in table I, showed that an increase of price earnings ratio of 1 will increase company's stock price by Rp7.34,- holding other variables constant. An increase of price to book by 1 value also will also increase its stock price by Rp216.19,-. Increase in net profit margin by 1% will decrease company's stock price by Rp32.14,-. Return on equity, GDP, inflation rate and BI-rate all have positive relation to company's stock price. An increase of 1% of ROE will increase stock price Rp25.85,- holding other variables constant. An increase by 1% of GDP will increase company's stock price by Rp7.56,- holding other variables constant. A one percent increase in Inflation rate will increase company's stock price by Rp51.4,- holding other variables constant. A one percent increase in BI-rate will increase company's stock price by Rp11.07,- holding other variables constant.

Regression equation of INDF in table I, showed that an increase of price earnings ratio of 1 will increase company's stock price by Rp282.68,- holding other variables constant. An increase of price to book ratio by 1 value also will also increase its stock price by Rp425.88,-. NPM, ROE and GDP have negative relation to company's stock price. An increase in net profit margin by 1% will decrease company's stock price by Rp14.02,-. An increase of 1% of ROE will decrease stock price Rp17.43,- holding other variables constant. An increase by 1% of GDP will decrease company's stock price by Rp10.35,- holding other variables constant. A one percent increase in Inflation rate will increase company's stock price by Rp451.72,- holding other variables constant. A one percent increase in BI-rate will decrease company's stock price by Rp983.2,- holding other variables constant.

Regression equation of KDSI in table I, showed that an increase of price earnings ratio of 1 will decrease company's stock price by Rp4.74,- holding other variables constant. PBV, NPM, ROE, GDP, INFL and BI-rate have positive relation to company's stock price. An increase of price to book ratio by 1 value also will increase its stock price by Rp862.17,-. An increase in net profit margin by 1% will increase company's stock price by Rp0.281,-. An increase of 1% of ROE will increase stock price Rp0.95,- holding other variables constant. An increase by 1% of GDP will increase company's stock price by Rp2.95,- holding other variables constant. A one percent increase in Inflation rate will increase company's stock price by Rp7.47,- holding other variables constant. A one percent increase in BI-rate will increase company's stock price by Rp33.49,- holding other variables constant.

Across company analysis showed that price book value and inflation rate have positive relation to stock price of all companies in the sample. Both GDP and BI-rate have positive relation to stock price of three companies out of four. Whereas price earnings ratio and return on equity have positive relation to stock price of two companies out of four. Net profit margin has negative relation to stock price of three companies out of four.

D. Analysis of Coefficient Correlation

In the table II, the coefficient correlation for AISA is 0.737; CEKA is 0.778; INDF 0.746 and KDSI 0.969. AISA, CEKA and INDF have a relatively the same value of coefficient correlation. These three companies involved in the same business. AISA are companies that produce biscuits, candy and rice distribution. CEKA's business is in crude palm oil and its derivative. INDF's business is in what it's called total food solution. Whereas KDSI has coefficient correlation 0.969, has quite different business. KDSI's business is household product, metal product covered with enamel and electronic.

In general all companies have strong coefficient correlation. Simultaneously, price earnings ratio, price to book value, net profit margin, return on equity, gross domestic product, inflation rate and BI-rate simultaneously has strong correlation with company's stock price.

TABLE II. R AND F-SIG

	AISA	**CEKA**	**INDF**	**KDSI**
R	0.737	0.778	0.746	0.969
F-sig	0.006	0.001	0.005	0.000

Sources: processed data

E. Testing Hypotheses

Using $\alpha = 5\%$, for AISA, CEKA, INDF and KDSI the F-sig value $< \alpha = 5\%$. This means Ho is rejected; there is a significant correlation between company's stock price with price earnings ratio, price to book value, net profit margin, return on equity, gross domestic product, inflation rate and BI-rate simultaneously

IV. CONCLUSION

The results of this study show that there is a strong correlation simultaneously between PE, PBV, NPM, ROE, GDP, INFL and BI-rate with companies' stock. This result is just like the theory explained. However, the result of each independent variable relation to stock price some are quite varied compare to theoretical framework. Theoretically, the relation of PE to stock price and interest rate to stock price are varied. It can be either negative or positive. Results of the study support this theory. ROE and GDP theoretically each has positive relation to stock price. Study result show only two model support this. Three regression model show negative relation between NPM and stock price, while theory said that the relation between two variables ideally positive. As for inflation rate, the regression model showed that it has positive relation to stock price. This support the theory that during inflation people do not prefer to save, alternatively they rather

prefer to invest their money something else, among other in stock.

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